University of Alberta

Correlates of Alcohol Consumption in Canadian Adolescent Females

By

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Chapter One

Introduction

Alcohol has been identified as the most abused substance. In addition, men in general are noted to use more alcohol than women (Alberta Youth Experience Survey, 2002). In some cultures, societal stereotypes endorse drinking as culturally acceptable and normal for men but not for women, to the extent that a woman found drinking incurs harsh criticism from the society as a form of punishment (Huselid & Cooper, 1992; Zilberman, Tavares, Blume, & el-Guebaly, 2002). The terms alcoholic and alcoholism are used to label people and their excessive drinking behaviors (Ettorre, 1992; 1997). According to Becker and Walton-Moss (2001), alcoholism may be characterized as a persistent inability to control drinking coupled with significant negative consequences.

In North America, alcohol use has been a factor in many road traffic accidents. Quinlan, Brewer, Sleet and Delinger (2000) estimated that 28.1% of all child passenger (aged 0-14) fatalities between 1985 and 1996 in the United States involved a drunk driver. In 1999 alcohol was a factor in 3% of property damage-only crashes, 4% of crashes where an injury occurred, and 21% of fatal crashes among drivers aged 15 to 20. The National Highway Traffic Safety Administration (NHTSA) estimated that alcohol was involved in 41% of fatal crashes and in 7% of all crashes in 2001 in the United States.

In Canada, drunk driving collisions are one of the leading causes of death and serious injury particularly among adolescents and young adults. Transport Canada

(2000) also indicated that about 1,350 people die in alcohol related crashes each year in Canada. These incidences have led to several federal and provincial legislative initiatives directed at reducing this serious problem in recent years (Mann, Smart, Stoduto, Bierness, & Lamble, 2002). Some of the initiatives have centered on setting limits for blood alcohol concentration (BAC) and charging people who exceed the legal limit. Studies on BACs (Beirness & Simpson, 2002; Chamberlain & Solomon, 2002; Mann et al., 2002; Shults, Elder, Sleet, Nicholas, & Alao, 2001), along with others already mentioned, point to the fact that alcohol consumption has become a social problem not only for adults but for youths in general.

Studies by Cohen et al. (1993), Reinhertz, Giaconia, Lefkowitz, Pakiz and Frost (1993) and Rohde, Lewinson and Seeley (1996) indicate that alcohol consumption before the age of 21 years is illegal in the United States but prevalence rates of alcohol abuse and dependence in late adolescence are near those for adults. Alcohol indeed remains the clear drug of choice among college students in North America. White, Jamieson-Drake, Swartzwelder and Scott (2002) estimated that 70% of college students in the United States consume alcohol at least once per month. Recent estimates suggest that nearly 50% of students nationwide regularly consume more than 4 or 5 drinks per occasion at least once every two weeks, a level of consumption referred to as binge or heavy episodic drinking. In Canada, although the legal age for drinking is set at 18 years for some provinces including Alberta, statistics show that adolescents are consuming alcohol before age 18. For instance, statistics from The Alberta Youth Experience Survey (TAYES) conducted by Alberta Alcohol

and Drug Abuse Commission (AADAC) in 2002 indicate that alcohol is the most frequently used substance (56.3%) by Alberta adolescents in grades 7-12. In Ontario and Nova Scotia, similar surveys confirmed youth use of alcohol at 65.5% and 51.7%, respectively. Even though adolescent alcohol use in Alberta is less than Ontario's (56.3% against 65.5%), the study revealed that more adolescents (13%) abuse alcohol in Alberta than in Ontario (9.1%). The percentage of youth who were current drinkers increased by grade with 17.6% in grade 7, 37.3% in grade 8, 52.4% in grade 9, 70.7% in grade 10, 73.3% in grade 11 and 81.2% in grade 12. Regarding alcohol abuse rates, TAYES (2002) found that youth in grades 11 and 12 in Alberta were more likely to report signs of abuse than youth in other grades.

It is generally reported that more males use and misuse alcohol than females (AADAC, 2003). For example, 59.7% of males compared to 53.6% of females use alcohol and 16.8% of males compared to 10.1% of females abuse alcohol. However, most recent studies (Angrove & Fothergill, 2003; Bergman & Kallmen, 2003; Carr-Greg, Enderby, & Grover, 2003) point to an increasing trend of alcohol use and misuse in females. In the United Kingdom statistics show an increase in women alcohol use from 9% in 1984 and 14% in 1996 to 17% in 2000 (Angrove & Fothergill, 2003). Bergman and Kallman note that Swedish women have developed more risky and harmful drinking habits as well. The female prevalence of hazardous drinking in Sweden has increased from 11% in 1997 to 15% in 2001. Despite this increasing trend, not much is documented about women's alcohol use, much less that of adolescent females. Van Den Bergh (1991) and Ettorre (1997) noted women are

under-represented in alcohol research and treatment settings. It is not surprising, therefore, that traditional alcohol abuse treatment programs were designed for males and have not necessarily proven to work for women (Dun, Lau, & Crutz, 2000; Hohman, Shillington, & Baxter, 2003; Marcenko, Spence, & Rohweder, 1994). There are clear indicators that more research must be focused on women's alcohol use and more importantly that of adolescent women, in order to provide effective preventive and treatment services suitable for women's needs.

Therefore, the purpose of this research was to examine factors that contribute to adolescent female alcohol consumption and to guide the development of programs and policies for healthy decision-making about alcohol consumption by this population. The specific research questions were: 1) What factors contribute to the onset of drinking in adolescent females? 2) What factors contribute to the frequency of drinking in adolescent females?

In this study, the following terms have been defined as:

1. *Correlates*: refers to the factors associated with the initiation of alcohol use and abuse.
2. *Alcohol consumption*: refers to both the use and abuse of alcohol where use is defined as the intake of a glass or bottle of alcoholic beverage once a month to once a week on a regular basis. Abuse is where alcohol is consumed in excess three or more times a week. Dependence is where one cannot carry out daily activities without desiring and drinking alcohol in increasing amounts.
3. *Adolescent females*: refers to girls aged from 12 to 19 years.

The next chapter is a review of the literature about the various theories of adolescence that have been analyzed in relation to adolescent females' alcohol consumption. Studies on adolescent alcohol consumption including gender differences in consumption patterns as well as motivating factors for drinking have also been examined. Chapter Three is an outline of the methodology employed in this study. In Chapter Four, the findings of the study are presented and the discussion of those findings follows in Chapter Five.

Chapter Two

Literature Review

The literature for this study includes what is known about the factors that contribute to adolescent female alcohol use. Relevant theories of adolescence have also been reviewed and analyzed to give some meaning to the drinking behavior of adolescents in general, whilst highlighting the specifics with regard to adolescent females. These include Erik Erikson's theory of identity development, Gilligan's theory of sex differences in adolescent development, Sullivan's interpersonal theory of adolescent development, and Margaret Mead's perspectives on post, co, and pre-figurative cultures. Recent studies (Blake, 2002; Harper, 2001) on adolescent development that make direct reference to the original theorists are also reviewed. In addition, gender differences and feminine issues have been discussed in relation to adolescent female alcohol consumption.

Theories of adolescence

Erik Erikson's theory of identity development

Theories of adolescent development have examined identity and sexuality as important issues during that stage. Among such theories is Erik Erikson's theory of identity development. Erikson viewed the life cycle as going through eight stages of development; namely, trust versus mistrust, autonomy versus shame or doubt, initiative versus guilt, industry versus inferiority, identity versus identity confusion, intimacy versus isolation, generativity versus stagnation, and integrity versus despair. According to Muuss (1996), Erikson characterized adolescence in 1950 as a period in

the human life cycle during which the individual must establish a sense of personal identity and avoid the dangers of role diffusion and identity confusion. Identity according to him must be searched for. It is not readily given to the individual by society, nor does it appear as part of maturation. It can be found only in interaction with significant others, a process Erikson called psychosocial reciprocity. Therefore the adolescent often goes through a period of great need for peer group recognition and almost compulsive peer group involvement. Conforming to peer expectations helps adolescents to find out how certain roles fit them, but this may also create a kind of new dependency so that the individual may accept the opinions of others too quickly. Consequently the peer group, the clique, and the gang help the individual in the search for a personal identity since they provide both a role model and very personal social feedback. As long as the adolescent depends on role models and feedback, the in-group feeling that the peer group provides will remain quite strong.

Eventually adolescents must free themselves from this new dependency on peers, which replaces dependency on parents, in order to attain a mature identity. Such an identity, once found, gives the young adult a sense of knowing where one is going and an inner assuredness of anticipated recognition from those who count. Failure to work on one's identity formation brings about the danger of role diffusion, which may result in alienation and a sense of isolation and confusion. The ensuing clannishness and intolerance of differences, including petty aspects of language, gesture, hair style and dress, are explained by Erikson as the necessary defenses against the dangers of self-diffusion that remain prevalent as long as identity has not

yet been achieved. Erikson believed that those youth who are attracted to delinquent behavior have a poorly formed sense of personal identity and low self-esteem. They doubt their occupational skills and are unable to carry deficits from previous psychosocial stages. Many of the social and behavioral problems adolescents encounter, such as substance abuse, antisocial behavior, suicide or suicide attempts, eating disorders and dropping out of school, can be viewed as reflecting earlier difficulties with mistrust, shame, doubt, guilt and inferiority feelings. Successful ways of coping with the challenges of adolescence, such as academic mastery, dating, individuation, and relationships all seem to build on earlier experiences of trust, autonomy, initiative, and industriousness (Muuss, 1996).

During the stage of intimacy versus isolation, peer group conformity loses much of its earlier importance, though it aids the young person in finding an identity and in making contacts with the opposite sex. Erikson suggested that identity precedes intimacy for males and vice versa for females. The theory also explores the issue of women and their inner space. Erikson maintained that males and females form different identities because they experience differences in the ground plan of their reproductive physiology, differences which pervade their lives. The core concept in defining a woman's sexuality is her inner space. As she forms her sexual identity during puberty, she must develop her sexual values and standards and decide when and who to allow into her inner space (Blake, 2002; Muuss, 1996). Muuss maintained that studies by Dyk and Adams and by Matteson in 1990 and 1993, respectively, support Erikson's view by noting that progression in relation to identity and intimacy

may be reversed for females with females developing intimacy before identity. The reason is that females actually develop a caring intimate orientation in interpersonal relationships earlier in life than males do.

Likely lessons from Erikson's theory

Erikson highlighted the importance of peer group in the adolescent's search for identity. During the stage of identity versus identity confusion when peer conformity replaces parental attachment, the adolescent woman is likely to initiate alcohol consumption in order to belong to a peer group that encourages alcohol use. An adolescent female may, for example, binge drink to identify with others in such a peer group. Since peer pressure can be such a powerful influence in identity formation, an adolescent female may be forced to initiate alcohol use to prove her maturity or to prevent being called names or considered weak. Erikson also indicated that the successful ways of coping with the challenges of adolescence such as academic mastery, school drop out, individuation, and relationships all seem to build on earlier experiences of trust, autonomy, initiative, and industriousness. Adolescent female abuse of alcohol might be partly explained by problems in these early developmental stages.

Carol Gilligan's theory of sex differences in adolescent development

Carol Gilligan noted that adolescence creates a crisis for girls because it forces a showdown between what they know to be true about relationships and responsiveness to others, coupled with demands to grow up and assert their independence by disconnecting and separating from others. For girls, this experience

of crisis is often devastating. Gilligan related this to an increased incidence of depression among adolescent females, increase in female suicide attempts, and suicidal ideation during adolescence. Gilligan, Lyons, and Hammer (1990) identified three stages of development that adolescent females undergo. The first stage is characterized by a confident worldview, where girls from ages 7 to 10 years tend to be forthright in their observations, claim authority without hesitation, and describe their world without inhibitions. From age 11, girls enter the second stage where they become astute observers and outspoken critics of where and when women speak and when they are silent. Girls in this stage are what Gilligan called "whistle blowers". They may resist and question the compliance of women to male authority. Stage three, which is characterized by personal confusion, occurs during adolescence. Gilligan found that adolescent females learn to understand the human social world, but bury their knowledge and part of themselves in an intricate, repressed underworld. It is during adolescence that females are in danger of losing their voice and connection with others. Adolescence for females has been noted to be a time of great paradox. By virtue of being adolescent, females are expected to separate from their families and become autonomous, but by virtue of being female, their need for connection has not abated. Adolescent females go through the complication of maintaining connections and relationships while developing a sense of autonomy (Muuss, 1996). Brown and Gilligan (1992) concluded that adolescent females struggle with their desire to have authentic relationships in which they can express themselves freely and at the same time have fear that a free expression of feelings and thoughts will jeopardize and

endanger their relationships with peers and adults in their lives. Caught in this trap, they are afraid to bring their real voice into adult womanhood.

Likely lessons from Gilligan's theory

Relating Gilligan's arguments to that of alcohol use by adolescent females, the following parallels can be drawn. First of all Gilligan noted that adolescence creates a crisis situation for girls which can be devastating, accounting for increased depression, suicide, and suicide attempts among adolescent females. This fits well with other studies (Carr-Greg, Enderby, & Grover, 2003; Zilberman et al., 2002), which have indicated that women use alcohol mainly because of depression and relationship problems including marriage and family crisis. Alcohol consumption, in excess or not, consequently becomes an escape for the built up emotional pain. Perhaps initiation of alcohol use is a way of demonstrating their autonomy and freedom from parental rule; as Gilligan noted, girls are expected to separate themselves and become autonomous. Or perhaps alcohol consumption is a way of rebelling against the adult world in the third stage when they begin to lose their voice. Or possibly, it makes it easier to navigate the world through all this confusion.

Sullivan's interpersonal theory of adolescent development

According to Muuss (1996) Harry Stack Sullivan (1892-1949) focused his theory of adolescent development on interpersonal relationships. He noted that the social component of human development begins with a fundamental state of interpersonal relatedness in infancy which continues unabated throughout adulthood. According to Sullivan, interpersonal relationships are the essential ingredients for

normal human development. One learns to behave in particular ways and modify behavior not because of biological imperatives but as a result of socialization. Relationships with other people influence how one develops and what one becomes. Sullivan noted that successful and positive interpersonal relationships are essential for a happy and satisfying life. The benefits of these interpersonal contacts depend upon positive feedback. A person's knowledge about being valued and considered attractive and worthwhile provides a feeling of security. Sullivan linked interpersonal relationships to what he called the self-system by noting that one's sense of self is shaped by the manner in which significant others see and treat the individual. The self-system therefore arises in interpersonal relationships.

In Sullivan's heuristic stages of development, pre-adolescence is considered very important. It begins with a powerful change in social orientation, with a need for an intimate personal relationship with a playmate of the same sex. In this sense, one withdraws from a larger group of playmates for just one playmate with whom to share thoughts, feelings and ideas. To Sullivan, intimacy involves interpersonal closeness and not genital contact. The preadolescent experiences for the first time, genuine love, loyalty, and opportunity for self disclosure with a same sex playmate. Lack of this relationship may impair heterosexual adjustment in later years. Early adolescence is marked by the eruption of genital maturity. During this stage the focus shifts from intimacy with the same sex to that with the opposite sex. This move initially involves a great deal of insecurity, fumbling, and unrealistic wishful thinking. As well it is complicated by the adolescent's anxiety about possible rejection by the opposite sex.

The adolescent in this stage experiences conflict between lust and security, which encompasses self-esteem, a feeling of personal worth, and absence of anxiety. This conflict is heightened by pressure from family against the establishment of intimacy with the opposite sex; a kind of pressure which according to Sullivan is missing in earlier same-sex relationships.

By late adolescence, the individual has established a pattern by which to satisfy genital needs. Adolescents at this stage explore what they prefer in terms of genital activity and how it will fit into their lives. Sullivan assumed that genital activity is essential to the establishment of mature, intimate interpersonal relationships based on mutual respect. The late adolescent needs to experiment with all of the components of the self-system in order to form a functioning unit (Muuss, 1996).

Likely lessons from Sullivan's theory

Drawing on some lessons from Sullivan's theory of adolescence to alcohol use in adolescent females, the following can be argued. Since interpersonal relationships are important and influence how one develops, adolescent female alcohol consumption is influenced by the kind of interpersonal relationships encountered. At the preadolescent stage where the adolescent seeks an intimate relationship with a same sex playmate, the adolescent female may fall into company that influences drinking. This may also be the case in early adolescence when the individual seeks a relationship with the opposite sex. Sullivan noted that this stage is complicated by anxiety about possible rejection. It is therefore possible that an adolescent female at this stage may initiate alcohol consumption in order to be accepted by a person of the

opposite sex who may be abusing alcohol. Lastly, Sullivan noted that by late adolescence, the individual has established a pattern by which to satisfy genital needs. It may be possible that the increase in alcohol consumption among late adolescents is a pattern by which adolescent females in this stage are satisfying their sexual needs with their male counterparts.

All these assumptions can be summarized in Margaret Mead's (1901-1978) articulation of post, co, and pre-figurative cultures. According to Muuss (1996), Mead stated that in post-figurative cultures children follow parental authority, values, and rules. The authority of parents is strong, religious and cultural rites are all powerful checks on youth, and they depend on the presence of three generations who live in the same village. In co-figurative cultures, peers and age-cohorts rather than elders begin to represent the future for an adolescent. The sense of interconnectedness and mutual respect and support between older and younger generations prevalent in the post-figurative family declines, and is replaced by isolation. Parents no longer provide the sole major models for teaching skills, knowledge, attitudes, and values useful in the future. The function of passing along cultural knowledge and skills becomes increasingly supplemented and eventually replaced by formal education. In the pre-figurative culture, the invention of the computer, availability of the internet, and increasing sophisticated technological advances form new cultural patterns for the youth. The role of parents as models further decline and their skills, knowledge, and values become out dated. Family disintegration continues to erode family support and cohesiveness and the older generation becomes isolated from the younger generation.

Religion now becomes a matter of choice and not a necessity. This is the cultural age in which adolescent females now find themselves and perhaps, with that liberty, comes substance use and abuse, particularly of alcohol.

Gender differences in alcohol use

For a long time studies on alcoholism have focused on male alcoholics. Much of the theory and treatment of alcoholism in women has historically been derived from the study of drinking in men (Becker & Walton-Moss, 2001; Patterson, 1995). For instance, Gentilello et al. (2000) noted that male patients constitute a large proportion of trauma patients, such that most studies of alcohol problems in trauma patients have been carried out with clinical data largely or totally contributed by male patients. It may, however, be incorrect to assume that the nature of alcoholism among women and men is identical, or that the size of the problem among women is small. Such an assumption underestimates the need to specifically study female alcoholism. Since the nature of alcohol use is not the same among men and women, several studies (Becker & Walton-Moss, 2001; Locke & Newcomb, 2001; Zilberman et al., 2002) have outlined gender differences in male and female alcoholism.

Firstly, Becker and Walton-Moss (2001) noted that alcoholism continues to be under-diagnosed. This is mainly due to the fact that clinicians have historically identified alcoholism-associated symptoms such as heart disease, cancer, traumatic injury, and depression among others, but have failed to identify the disease itself. Therefore under-diagnosis persists regardless of ethnicity, race, gender, or socioeconomic status. The pattern of under-diagnosis is particularly notable in

women. Outlining gender differences in male and female alcohol use, Becker and Walton-Moss (2001) noted that alcohol use is greater among adult men than women. Among adolescents, alcohol use is approximately equal between genders. However, Gentilello et al. (2000) indicated that women are the fastest growing segment of the alcohol-abusing population. The sharpest increase in motor vehicle crashes in recent years has been in females with moderately elevated BAC levels who have a risk of fatal crash that is 21 times higher than that of men with comparable BAC. Why is this so? The answer may be found in alcohol concentration levels. Women have been identified to have 14% less body water content than men. Since ethanol is a water-soluble molecule that diffuses uniformly, women tend to reach higher BAC levels than men do after drinking. Fluctuations in female hormones are also suspected to affect the rate of alcohol metabolism. Alcohol increases estradiol levels so a woman's BAC level may vary daily based on her menstrual cycle. For instance Brady and Randall (1999) indicated that alcohol-related hepatic injury is potentiated by estrogen that is seen in higher proportion in women. On the other hand, men have predictable BACs. Furthermore, the lower activity of alcohol dehydrogenase in women's gastric mucosa, results in higher BACs in women given the same amount of alcohol as in men (Baraona et al., 2001).

As such, women are thought to be more vulnerable than men to the physical effects of alcohol. The increased sensitivity in women leads to faster development of alcohol dependence and alcohol related morbidity and mortality patterns. Female alcoholics are cited to have mortality rates 50 to 100% higher than male alcoholics.

Alcoholic women develop alcoholic liver disease at lower levels of intake and over shorter periods of time compared to men. The liver disease also progresses from alcoholic hepatitis to cirrhosis faster in women than in men (Becker & Walton-Moss, 2001).

Other gender differences that have been cited between male and female alcoholics include reasons for alcohol use. Whereas men are noted to use alcohol to socialize, women are noted to use alcohol to cope with negative moods. One of such moods cited in most studies (Carr-Gregg, Enderby, & Grover, 2003; Deykin, Buka, & Zeena, 1992; Edwards, Marshall, & Cook, 1997; Kessler et al., 1997; Stowell & Estroff, 1992; Zilberman et al., 2002) is depression. Major depression has been identified as a dual diagnosis in alcoholic women. According to Kessler et al. (1997) the relative risk of developing alcohol dependence or abuse is 4.1 for a woman with major depression compared to 2.7 for a man with the same disorder. Among depressed alcoholics, depression is more severe in females than males, whereas the alcoholism is more severe in males. In a series of studies conducted in treatment facilities for adolescents with a history of alcohol and other substance abuse, Stowell and Estroff (1992) indicated that about 50% had affective disorders. The majority of the affective disorders were depression and dysthymia (chronic depressive mood). Deykin et al. (1992) also studied 223 adolescents in a chemical dependency treatment facility and found that 25% of them had major depression. Edwards, Marshall and Cook (1997) also concluded from their study on treatment of drinking problems that

women who misuse alcohol are more likely than men to have a history of affective disorders including depression.

Identifying and diagnosing alcohol abuse

King et al. (1996) indicated that despite the importance of recognizing and treating alcohol and other drug abuse in depressed adolescents, recognition of such abuse is difficult. This is due to the similarities between clinical features of alcohol abuse and depression such as loss of interest in previously enjoyed activities. Other affective disorders identified in women with alcohol use are suicidal ideations and attempts, eating disorders, and anxiety disorders. It has been found that suicide attempts are more frequent in female than male alcoholics. Alcoholic women are also found to exhibit higher rates of anxiety, loss of self-esteem, and feelings of shame than men. Men, on the other hand, have reported more antisocial behaviors (Hochgraf, Zilberman, & Andrade, 1995; Kingree, Thompson, & Kaslow, 1999). Research in the 60's and 70's documented a strong link between antisocial behavior, conduct disorder and later alcohol abuse. Bukstein (1995) indicated that alcohol and other substance abuse represents one form of behavioral deviance, such that an association with a broader spectrum of behavioral deviance is not surprising. Lewis and Bucholz (1991) noted that there should be a differentiation made between those individuals whose pathological drinking is the primary problem and whose antisocial behavior arises from this excess consumption, from those whose antisocial behavior is the primary problem and whose excess consumption is part of that behavior.

Among adolescents, depressive disorders are common among females whereas heavy and frequent drinking is common among males (Johnston, O'Malley, & Bachman, 1993). In a national longitudinal study of youths in Australia, Grant (2001) found that early onset of alcohol use strongly predicted alcohol use disorders in adolescents. The study also found that for each year that drinking onset was delayed, the likelihood of developing problems with alcohol was significantly reduced. The odds of developing abuse or dependence were two to four times greater in subjects who reported a history of engaging in antisocial behavior such as shoplifting, stealing, property damage, fighting, use of force, and drugs and drug trafficking compared to those who did not. Being a high school drop out also increased the likelihood of alcohol dependence. Family history of alcohol use has been identified as a predisposition factor to problem drinking. Therefore, an alcoholic is more likely to have a parent or more distant relative who is or has been an alcoholic (Lewis & Bucholz, 1991).

This might be considered in light of the theories by Zucker (1987) and Del Boca (1994). Zucker listed four subtypes of alcoholism namely antisocial, developmentally cumulative, developmentally limited, and negative affect. Antisocial alcoholism is seen in males and is thought to have a genetic basis and poor outcome. Developmentally cumulative alcoholism is initially limited and elevates to a dependent level over the life course. Developmentally limited alcoholism occurs in both males and females and is characterized by heavy drinking in late adolescence that subsequently decreases. Negative affect alcoholism occurs primarily in women and is

characterized by using alcohol for mood regulation, often with a family history of depression and a higher suicide risk (Locke & Newcomb, 2001).

The second theory by Del Boca (1994) also outlines four groups; namely, a low-risk-low severity group, an internalizer group, an externalizer group, and a high-risk-high-severity group. For the low-risk-low-severity group, alcohol use and associated risks are low. Gender differences are reported between the internalizer group, dominated by women, and the externalizer group, dominated by men, in terms of affective disorders associated with alcohol use. Females internalize distress and report more depressive and anxious symptoms than males.

Issues of sexuality and alcohol use among adolescent females

One of the issues identified with alcohol consumption in women is sexual abuse. Childhood sexual abuse is found to be associated with later development of alcohol abuse in women. Bien, Miller and Tonigan (1993) and Miller (2000) found that 70% of the alcoholic females in treatment had been sexually abused in childhood. Women who reported a history of sexual abuse were three times more likely to have a lifetime diagnosis of alcohol abuse or dependence than women in the general population. Miller Downs and Tesla (1993) and Clark, De Bellis, Lynch and Cornelius (2003) also found that childhood sexual abuse is more severe in alcoholic females than non-alcoholic females. In addition, alcoholic females experience higher rates of victimization than alcoholic males. Gross (1998) and Malik, Sorenson, and Aneshensel (1997) found in their studies that victimization has increased among high school and college female students. Their surveys of female college students indicated

an association between alcohol use and sexual victimization. Female high school students who used alcohol were more likely to be victims of date violence. Kilpatrick, Acierno, Resnick and Saunders (1997) also confirmed that women with a history of childhood sexual abuse and subsequent alcoholism were vulnerable to further victimization. Women who did not experience childhood sexual abuse but experienced sexual victimization of some sort were also more likely to develop alcohol dependence.

In a study on the prevalence of herpes simplex virus type 2 among adolescent females with alcohol use, Cook, Pollock, Rao, and Clark (2002) emphasized the need to address sexually transmitted diseases among adolescents with alcohol problems. In their study of 240 participants, females with alcohol problems were significantly more likely to be white, have a greater number of lifetime sexual partners, and have tried other drugs in addition to alcohol. These girls were also less likely to use condoms during sexual activity. Sexually transmitted diseases like herpes simplex type 2 were detected among some of the study participants and others tested positive for hepatitis B infection. Risky sexual behavior is identified as common among adolescent females with alcohol abuse or dependence in the United States. Research has found that adolescent females with drinking problems are more likely than other drinkers to engage in sexual intercourse, have greater numbers of sexual partners, and initiate sexual activity at a slightly younger age (Bailey, Pollock, Martin, & Lynch, 1999; U.S. National Household Survey on Drug Abuse-NHSDA, 1999). Bonomo et al. (2001) concluded from their study of behaviors of 16 and 17 year olds occurring under the

influence of alcohol, that physical injury and high-risk sexual behavior under the influence of alcohol are common in teenagers. Almost one in 10 of the participants in this study reported having sex under the influence of alcohol and regretting it later. Ten percent also reported having had unsafe sex while drunk. Other issues of concern to researchers include health beliefs and behaviors of pregnant adolescents regarding alcohol and other drug use. The NHSDA (2001) estimated that among pregnant women aged 15 years and above, in 2000 and 2001 combined, 12.9% used alcohol and 4.6% were binge drinkers in the United States. Prenatal care is needed to ensure adequate nutrition of both mother and child. It is important to ensure that possible effects of substance use during pregnancy on the developing child are emphasized to the young mother (Cogswell, Weisberg, & Spong, 2003).

In conclusion, the literature review has highlighted several issues concerning women's alcohol use and those specific to adolescent females. Adolescent developmental theories have been analyzed in relation to alcohol use in adolescent females. Several gender differences relating to alcohol consumption between males and females have been highlighted. Issues of psychosocial and physiological effects of alcohol on the body, including gender perspectives, have been reviewed. As well, specific female issues relating to pregnancy and alcohol use, sexuality and treatment seeking problems have been considered. In light of the above, it is evident that alcohol consumption is a growing societal problem not only for men but also for women. Although women's alcohol use has been studied in general in relation to sexuality, pregnancy and other issues reviewed in the literature, the situation among

adolescent females is under explored. Secondly, most of the studies were done in the United States, leaving the situation in Canada under-researched. It is therefore important that adolescent females' increasing use of alcohol be critically reviewed as a Public Health issue with implications for nursing practice concerned about development of young women into adulthood. As alcohol consumption is a worldwide issue, it is important to compare and contrast the patterns in different parts of the world. As a beginning step, this study has focused on Canada.

Chapter Three

Method

To examine factors that contribute to adolescent female alcohol consumption in Canada, relevant information about adolescent females from the literature review guided the selection of variables from the 2001 Canadian Community Health Survey (CCHS) for a secondary analysis. The specific research questions for this study were:

1) What factors contribute to the onset of drinking in adolescent females?
2) What factors contribute to the frequency of drinking in adolescent females?

Design

The CCHS aimed at finding answers to two main questions: 1) How healthy is the health care system? 2) How healthy are Canadians? Objectives of the survey were to aid in the development of public policy, to collect data on the economic, social, demographic, occupational, and environmental correlates of health, and to increase understanding of the relationships between health status and health care utilization. Several content modules were included in the questionnaire. The use of alcohol and alcohol dependence / abuse were two of the ten modules conducted across the ten provinces and 3 territories of Canada. The secondary analysis conducted in this study has focused on the alcohol use and the alcohol dependence / abuse modules of adolescent females, as well as variables from other modules such as sexuality, experiences of depression and suicide.

Sample and Setting

The target population in the CCHS included persons aged 12 years and above, living in private dwellings in the 10 provinces and 3 territories of Canada. Persons living on reserves or crown lands, those living in institutions, full-time members of the Canadian Armed Forces and residents of remote regions were excluded from the study. Each province was divided into a number of health regions. A total of 133 health regions were sampled from the ten provinces, and three from the three territories. This made a grand total of 136 health regions from across the country. In all, a random sample of 133,300 people participated in the survey.

The CCHS used the frame designed for the Canadian Labour Force Survey as its primary sampling frame. A multistage stratified cluster design was used to sample dwellings within the area frame. A list of dwellings was prepared in the first stage and a sample of dwellings selected from the list in the second stage. The households in the selected dwellings formed the sample of households. In some health regions, a random digit dialing (RDD) sampling frame was also used. The sampling of households from the RDD frame used the elimination of Non-Working Banks method, a procedure adopted by Statistics Canada's General Social Survey. A telephone bank (area code plus the five digits of a seven-digit telephone number) was considered. The working banks were re-grouped to create RDD strata to encompass, as closely as possible, the health region areas. Within each RDD stratum, a bank was randomly chosen, and a number between 00 and 99 was generated at random to create a complete 10-digit telephone number (Beland, 2002). Because of the particular focus

of this study, adolescent females aged from 12 to19 years comprised the sample. In this group, there are a total of 8,709 eligible cases from the CCHS data and all were included in the analysis.

Questionnaire

The CCHS questionnaire data (see Appendix 1 for interview questions) provide the basis of analysis for this study. The questionnaire was designed for computer-assisted interviewing (CAI). Thus, as the questions were developed, the associated logical flow into and out of the questions was programmed, specifying the type of answer required, minimum and maximum response values, on-line edits associated with the question, and procedures for handling item-non-response (Beland, 2002). For this study, answers to specific questions on alcohol use and alcohol dependence/abuse, as well as correlate questions, are included in the database. The questions sought answers to respondents' frequency of alcohol use within the last 12 months before the survey, any attempts to quit drinking, drinking and driving, emotional or psychological problems co-existing with the drinking behavior, and respondents' dependence on alcohol among other questions. Variables of interest included in the questions were frequency of alcohol consumption, quantity of alcohol consumed estimated from number of drinks within specified time frames, attempts to reduce or quit drinking and the reasons, age of onset of drinking, drinking and driving, existence of emotional or psychological problems and signs of existing alcohol abuse /dependence.

Data Analysis

Data were analyzed using SPSS statistical software. This included descriptive analysis using frequency counts and cross tabulations for examining the relationships among variables under study. Key dependent variables related to alcohol consumption were obtained from the questionnaire data in the original research. The ones used were:

Alcohol use: variables include type of drinker (comprising of regular drinkers, occasional drinkers, former drinkers, and never drank)

Alcohol dependence/abuse: variables include alcohol dependence, predicted probability for respondents.

Other variables that were examined to determine correlates of alcohol use/ abuse include:

Depression: variables include depression scale- predicted probability, number of weeks feeling depressed and specific month last felt depressed.

Socio-demographic characteristics: one variable, racial origin as reported

Household variables including education: variables include age, sex, and marital status (comprising of married, non-married and common law relationship).

Education: highest level of education of respondent, 4 levels and highest level of education- household (household members), 4 levels. The four levels are less than secondary education, secondary graduate, other post-secondary education and post-secondary education.

Sexual behaviors: variables include age of first sexual intercourse, number of sexual partners, frequency of intercourse, and condom use.

Suicidal thoughts and attempt: variables include suicidal ideations, attempts to commit suicide, and help sought if any.

Injuries: variables include type of injuries suffered, hospitalizations, and or treatments given, and whether the injuries were activity-limiting or non-limiting.

Missing Cases

A major limitation in this study is the issue of missing cases in the data. Certain aspects of the data such as data on depression, suicide, alcohol dependence, sexual risk behaviors and injuries had several missing cases. This means that many respondents did not answer questions in these areas or prior questions eliminated the possibility of answering questions in these areas.

Interpretation and Practice

Based on the interpretation of the correlates in this study, as well as existing literature, the information obtained has been used to identify areas needing further research as well as information useful for development of health promotion programs and policies. This discussion can be found in Chapter Five.

Ethics

Panel B of the Health Research Ethics Board, a joint committee of Capital Health and the University of Alberta approved this study. Since this is a secondary data analysis of the 2001 CCHS, no recruitment of a study sample was necessary.

Therefore, issues pertaining to informed consent and confidentiality were addressed at the time that the data were collected. The survey data are available in a public use file.

Chapter Four

Results

Demographic Background

The study surveyed 8,709 adolescent females. Of this total 36.5% were aged 12 to 14 years and 63.5% were aged 15 to 19 years. Most of the respondents (68.5%) in this study lived with their two parents and siblings. A small percentage (13%) lived with single parents and siblings. A total of 88.2% of respondents in this sample were white and 11.8% were from visible minority groups. (Table 1)

Table 1: Racial Origin and Age

		Age		Total
		12 TO 14 YEARS	15 TO 19 YEARS	
	Whites	87.2%	88.7%	7539
	Visible Minority	12.8%	11.3%	1009
Total N		3108	5440	8548

(Note: A total of 161 missing cases did not have racial origin identified)

The vast majority of respondents were single (97.8%), leaving a small percentage as married or with common-law partners within the older age group (0.3% & 1.8% respectively). (Table 2A)

Table 2A: Marital Status and Age

		Age		
		12 TO 14 YEARS	15 TO 19 YEARS	
Married		.0%	.5%	26
	Common Law	.0%	2.8%	157
	Single	100.0%	96.6%	8518
	Not Stated	.0%	.1%	9
	TOTAL N	3180	5529	8709

As indicated by Table 2B below, the younger age group was comprised of individuals not yet in high school or who had not graduated from high school. Two-thirds or 65.7% of the older age group had not completed secondary education. Seventeen percent had graduated from high school, 13.6% were pursuing post-secondary studies, and 3.7% had graduated from a post-secondary educational program. This is an indication that the majority of respondents were either still in high school or primary level, but school dropouts were not specified.

Table 2B: Highest Level of Education by Respondent and Age

		Age		Total
		12 TO 14 YEARS	15 TO 19 YEARS	
	< Than Secondary	100.0%	65.7%	6800
	Secondary Grad.	.0%	17.0%	939
	Other Post- Sec	.0%	13.6%	748
	Post-Sec Grad	.0%	3.7%	208
Total N		3180	5515	8695

(Note: A total of 14 missing cases did not indicate education level)

The data were also analyzed to ascertain the general education level of household members of respondents. Household members were defined as any member within one dwelling. In this case, as indicated earlier, most respondents live with two parents and siblings and the rest with one parent and siblings, suggesting that household members included in this section are comprised of parents and siblings. For the younger age group, 68.3% of households included post-secondary graduates (Table 2C). For the older age group, 65.2% of households included post-secondary graduates. This is an indication that generally, respondents came from homes with educated family members or members with at least high school education.

Table 2C: Highest Level of Education of Household and Age

		Age		Total
		12 TO 14 YEARS	15 TO 19 YEARS	
	< Than Secondary	8.8%	8.7%	739
	Secondary Grad.	15.5%	15.1%	1292
	Other Post-Sec.	7.4%	11.0%	824
	Post-Sec. Grad.	68.3%	65.2%	5642
Total N		3122	5375	8497

(Note: A total of 212 missing cases did not indicate education level)

Alcohol Consumption

There are four types of drinkers examined in this analysis. Regular drinkers were those who consumed alcohol in small or large quantities on a daily and regular basis. Occasional drinkers were those who consumed alcohol in large or small quantities when the need or occasion arose. Former drinkers were those who were alcohol consumers at one time but had quit the habit of drinking. A final category considered those who never drank alcohol (CCHS derived variable, 2002). See Table 3B for frequency of consumption.

These four types of drinkers have been analyzed according to the age grouping, taking into consideration their educational background, racial origin, the existence or probability of depression and suicide, and the probability of alcohol dependence. Seventy-three percent of respondents in the older age group consumed alcohol, while only 21% in the younger age group consumed alcohol.

Table 3A: Type of drinker and Age

		Age		
		12 TO 14 YEARS	15 TO 19 YEARS	Total
Type of drinker - (D)	REGULAR DRINKER	5%	44%	2576
	OCC. DRINKER	16%	29%	2100
	FORMER DRINKER	9%	8%	732
	NEVER DRANK	70%	19%	3235
Total N		3159	5484	8643

(Note: A total of 66 missing cases did not indicate drinking type)

Table 3A indicates that alcohol consumption increased considerably starting at age 15, several years before the legal age of consumption in most provinces. This finding is supported by other studies (The Alberta Youth Experience Survey conducted by Alberta Alcohol and Drug Abuse Commission (AADAC), 2002; Angrove & Fothergill, 2003; Bergman & Kallmen, 2003), which found that alcohol consumption increases with age and grade among adolescents in general. This study has proven the same situation for adolescent females. The Table also shows that for those who drink (regular and occasional drinkers), more of the younger age group were occasional drinkers whereas more of the older age group were regular drinkers.

Frequency of Alcohol Consumption

The frequency of consuming five or more alcoholic beverages was analyzed for regular and occasional drinkers to ascertain the drinking pattern of these two groups of alcohol consumers. As indicated in Table 3B, of the alcohol consumers who have never drunk five or more alcoholic beverages at one time (n = 2220), the majority (69.2%) are occasional drinkers. Fewer regular drinkers (30.8%) fall into this category. On the contrary, of those drinkers who consume five or more drinks less

than once in a month (n = 1350), regular drinkers form the majority (61.5%) compared to 38.5% of occasional drinkers. For those who indicated that five or more drinks were consumed once a month (n = 428), 95.1% were classified as regular drinkers. Regular drinkers comprised the majority of alcohol consumers who indicated that they consumed five or more drinks in a range of two to three times a month to more than once a week.

Table 3B: Type of Drinker and Frequency of Having 5 or More Drinks

	Frequency of having 5 or more drinks at one time						Total
	NEVER	< ONCE/ MONTH	ONCE/ MONTH	2-3 TIMES/ MONTH	ONCE/ WEEK	> ONCE/ WEEK	
REGULAR DRINKER	30.8%	61.5%	95.1%	96.7%	99.5%	94.7%	2559
OCCASIONAL DRINKER	69.2%	38.5%	4.9%	3.3%	.5%	5.3%	2094
Total N	2220	1350	428	363	198	94	4653

Alcohol Consumption and Education

This section is focused on providing information on the general educational background of alcohol consumers (comprising both regular and occasional drinkers), and their household members; defined earlier on, as comprised of parents and siblings. Table 4A in this section shows the educational attainment levels of household members of alcohol consumers. Table 4B shows educational attainment levels of alcohol consumers within the two age groups (12 to 14 years and 15 to 19 years) identified in this study. This is to help identify if there are any differences between the information obtained on educational background of all respondents and their household members, and that of alcohol consumers only.

Table 4A: Type of Drinker and Highest Level of Education of Household (HH)

		Highest level - HH 4 levels				Total
		< Than Secon-dary	Secon-dary Grad.	Other Post-Sec.	Post-Sec. Grad.	
	REGULAR DRINKER	29.2%	28.7%	38.3%	28.6%	2497
	OCC. DRINKER	21.7%	25.9%	23.3%	24.2%	2042
	FORMER DRINKER	10.2%	8.9%	8.7%	8.1%	717
	NEVER DRANK	39.0%	36.5%	29.7%	39.0%	3181
Total N		734	1290	815	5598	8437

Considering the highest educational background in households of adolescent female alcohol consumers in this study (Table 4A), 50.9% of 734 households of alcohol consumers with less than secondary education were regular and occasional drinkers. A total of 54.6% of 1,290 households of alcohol consumers included

secondary graduates, 61.6% of 815 households included members with other post-secondary education, and 52.8% of 5598 households included post-secondary graduates. These statistics are remarkably similar across varying household educational attainment levels, and suggest that household educational attainment level is not a good predictor of drinking in adolescent females. More detailed data such as educational attainment of specific family members would be useful in a future study.

Table 4B shows the educational level of alcohol consumers (regular and occasional drinkers) only, within the two age groups. The interesting thing about this table is that there is a sharp escalation of both regular and occasional drinkers in the older age group when respondents with less than secondary education are compared, with similar proportions of three groups (regular, occasional, and non-drinkers) in the 15 to 19 year age group. There is a second escalation in drinking behavior in the 15 to 19 year age group in respondents with completed secondary education, with the rates of regular and occasional drinkers very similar at all higher levels of education, with only a slight increase observed. This may reflect an increase in drinking behavior with age within the 15 to 19 year cohort and would be interesting to follow in more detail to ascertain if there is a precise age (within one or two years) at which drinking behavior in females increases sharply.

Table 4B: Highest Level of Education of Respondent and Type of Drinker and Age

Highest level - respond. 4 levels			Age		Total
			12 TO 14 YEARS	15 TO 19 YEARS	
< THAN SECONDARY	Type of drinker	REGULAR DRINKER	5.0%	34.9%	2695
		OCC. DRINKER	16.6%	31.3%	3236
	Total N		3159	3596	6755
SECONDARY GRAD.	Type of drinker	REGULAR DRINKER		60.7%	563
		OCC. DRINKER		25.0%	232
	Total N			928	928
OTHER POST-SEC.	Type of drinker	REGULAR DRINKER		62.6%	464
		OCC. DRINKER		23.1%	171
	Total N			741	741
POST-SEC. GRAD.	Type of drinker	REGULAR DRINKER		64.4%	132
		OCC. DRINKER		22.4%	46
	Total N			205	205

Alcohol Consumption and Racial Origin

The majority of adolescent female respondents in this study were whites; 88.2% (n=8,548). Of this proportion, over half (56.6%) were alcohol consumers. Of this 56%, about one-third (31.4%) were regular drinkers and almost one-quarter (25.2%) were occasional drinkers. Out of the 37% of the visible minority respondents who drink, 18.7% were regular drinkers and 18.5% were occasional drinkers. Furthermore, a larger percentage of visible minority respondents have never drank. This is over half of the visible minorities compared to one-third of whites. (Table 5) This suggests that alcohol use is more prevalent among white adolescent females than

adolescent females of visible minority groups. Racial status may therefore be a key correlate in respondents' drinking behavior. It would be interesting to pursue this line of questioning further as immigrant, aboriginal, and Canadian-born visible minority females may exhibit varying drinking behaviors. It is also interesting to note that 10.1% of the visible minority respondents were former drinkers.

Table 5: Type of Drinker and Racial Origin

		Racial origin		Total
		WHITE	VISIBLE MINORITY	
	Regular Drinkers	31.4%	18.7%	2542
	Occasional Drinker	25.2%	18.5%	2075
	Former Drinker		10.1%	723
	Never Drank	35.2%	52.8%	3163
Total N		7501	1002	8503

(Note: A total of 206 missing cases did not indicate racial origin)

Alcohol Consumption and Dependence Probability

Using the classification of Ali (2002), respondents were classified as having experienced alcohol dependence if the estimated probability of dependence was 0.85 or more. This means that the respondent reported at least three of the following symptoms of alcohol dependence: being drunk or hung over while at work or school or while caring for children; engaging in risk taking behavior while drunk or hungover; having psychological problems related to alcohol use; experiencing a persistent desire for alcohol; drinking too much or for too long or experiencing increased tolerance.

Probability of alcohol dependence was calculated and dependence probabilities of 1.00 and 0.85 were examined. Considering the column percentage within the different age groups, as indicated by Table 6, only 0.2% of the population of the younger group (n = 3163) and 2.2% (n = 5459) of the population of the older group had a dependence probability of 1.00. For a predicted probability of 0.85, only 0.2% and 1.9% of respondents had a dependence probability for the younger and older age groups, respectively. These percentages represent a very small proportion within the two populations. However it should be noted that adolescents aged 15 to 19 years had higher dependence probability percentages compared to 12 to 19 year olds, and so were more likely to experience depression.

Table 6: Alcohol Dependence-Predicted Probability and Age

		Age		Total
		12 TO 14 YEARS	15 TO 19 YEARS	
	00	98.9%	87.9%	7933
	.05	.4%	4.8%	276
	.40	.3%	3.2%	181
	.85	.2%	1.9%	103
	1.00	.2%	2.2%	129
Total N		3163	5459	8622

(Note: A total of 87 missing cases not accounted for)

Alcohol Consumption and Depression

Prevalence of depression is defined as the percentage of the population that is estimated to have experienced depression at some point in the year before the survey

interview. Respondents were considered to have had a depressive episode if they had a probability of 0.9 or more (Ali, 2002). In addition, five or more of the following symptoms of depression had to be exhibited; appetite or sleep disturbance, decreased energy, difficulty concentrating, feelings of worthlessness and suicidal thoughts.

Considering the total populations of the two age groups, the predicted depression probability within each age group was small as indicated by Table 7. Only 5.6% of 12 to 19 year olds had a depression probability of 0.9 compared to 12.9% of 15 to 19 year olds who had the same depression probability. Adolescent females aged 15 to 19 years were therefore more likely to experience depression than those aged 12 to 14 years. It is of interest to note that 12.9% of adolescent females aged 15 to 19 years were noted to have a depression probability of 0.90. This percentage is far greater than the 2.2% of respondents within the same age group with a predicted alcohol dependence probability of 1.00. There is therefore a sharp increase in probable depression occurrence cases when compared to probable alcohol dependence.

Table 7: Depression Scale Predicted Probability and Age

		Age		Total
		12 TO 14 YEARS	15 TO 19 YEARS	
	0. 00	92.5%	83.9%	7358
	0.05	.2%	.2%	17
	0.25	.4%	.3%	25
	0.50	.4%	.9%	59
	0.80	.9%	1.8%	127
	0.90	5.6%	12.9%	872
Total N		3078	5380	8458

(A total of 251 missing cases not accounted for)

In looking at adolescent females who responded to having experienced depression, forty-three adolescent females felt depressed for 5 weeks and of this number 31 (72.1%) were drinkers. Twenty (64.5%) of the 31 were regular drinkers. Sixty-six respondents felt depressed for 6 weeks and 57 (86.4%) of these were drinkers. Ninety-seven respondents felt depressed for 8 weeks, of which 74 (76.3%) were drinkers. Twenty respondents felt depressed for 20 weeks of which 18 (90%) were drinkers. Eighteen were depressed for 26 weeks and 10 (55.5%) were drinkers. Ten respondents were depressed for 52 weeks of which 7 (70%) were drinkers. The majority of the respondents felt depressed in the months of February (102 respondents), September (111 respondents) and December (97 respondents). Drinkers were once again in the majority; 76 (74.5%) in February 88 (79.3%) in September and 73 (75.3%) in December. These statistics suggest a pattern of more drinkers having

experienced depression than non-drinkers, occurring mostly in the fall and winter seasons.

Alcohol Consumption and Suicide

Considering a total of 418 adolescent females who have considered suicide in their lifetime, 245 (58.6%) were regular drinkers and 119 (28.5%) were occasional drinkers. All respondents who had considered suicide in their lifetime and in the past twelve months were within ages 15 to 19 years. The regular and occasional drinkers, 364 in number, form 87.1% of this group, with regular drinkers reporting double the suicidal ideation than occasional drinkers. Suicide thoughts in former drinkers and those who had never drank were considerably lower. This suggests a link between thoughts of suicide and drinking behavior in adolescent females and should be pursued with further research.

Table 8: Type of Drinker and Having Considered Suicide - Lifetime

		Has considered suicide - lifetime		Total
		YES	NO	
Type of Drinker	REGULAR DRINKER	58.6%	43.5%	1326
	OCC. DRINKER	28.5%	28.5%	827
	FORMER DRINKER	6.5%	8.8%	247
	NEVER DRANK	6.5%	19.2%	502
Total N		418	2484	2902

(Note: A total of 5807 missing cases did not indicate suicide experience)

Alcohol Consumption and Sexuality

This part of the data was analyzed to ascertain if alcohol use correlates with respondents' sexual behavior. Respondents who were married and who were in

common-law relationships were not included in the analysis as they were already in legally recognized sexual relationships. This is not to suggest that they are not capable of indulging in sexual risk behaviors. They may be capable of doing so but as this cannot be assumed, this part of the analysis discusses single respondents only. It was noted that all respondents who answered 'yes' to the question 'Have you ever had sexual intercourse?' are in the 15 to 19 year old group and form 41.1% of their age group who reported being single (Table 9A). The majority of this 41.1% also indicated that sexual activity had taken place in the past year of the survey.

Table 9A: Ever Had Sexual Intercourse and Age

		Age	Total
		15 TO 19 YEARS	
Ever had sexual intercourse	Yes	41.1%	874
	No	58.9%	1253
Total N		2127	2127

(Note: A total of 6582 missing cases did not indicate sex experience)

Table 9B indicates the sexual experience within the past year of the survey of the four types of drinkers aged 15 to 19 years old. Of the total of 870 respondents who had sexual intercourse in the past year, regular drinkers form 67.4% and occasional drinkers form 23.9%. Considering these two types of alcohol consumers together, they form a total of 91.3% of the 870 respondents. This compares with the small percentage of 3.6% of non-drinkers who indicated the same sexual activity. There is therefore a clear indication that sexual activity is higher among alcohol consumers than non-drinkers in this study.

Table 9B: Type of Drinker and Age and Sexual Intercourse in Past 12 Months

Had sexual intercourse in past 12 months			Age	Total
			15 TO 19 YEARS	
YES	Type of Drinker	REGULAR DRINKER	67.4%	586
		OCC DRINKER	23.9%	208
		FORMER DRINKER	5.2%	45
		NEVER DRANK	3.6%	31
	Total N		870	870

Condom Use

As shown by Table 9C, very few respondents indicated their use of condoms during sexual activity. The greater percentage (55.6%) indicated that a condom was not used in the last sexual activity. However, due to the large number of missing cases, it cannot be concluded if the same situation is true for the rest of the respondents.

Table 9C: Condom Use - Last Time and Age

		Age - (G)	Total
		15 TO 19 YEARS N = 124	
Condom use-last time	Yes	44.4%	55
	No	55.6%	69
Total		124	124

(Note: A total of 8,585 missing cases did not indicate condom use)

Determining the situation of condom use for the four types of drinkers, of the 100 regular drinkers who indicated condom use in the last sexual activity, only 41% of

regular drinkers used condoms, leaving almost two-thirds (59%) who did not use condoms.

Alcohol Consumption and Injury

This section was analyzed to ascertain the experience of injury of alcohol consumers. The cause of injury is grouped under 'falls', 'transport accident', 'bumped/crushed', 'sharp/hot object', 'exertion/move' and 'other'. Questions relating to most serious injury with hospitalization, injury within the last 12 months of the survey, and treatment received were also asked. Injury status was classified under activity-limiting injury only, and both activity-limiting and non-limiting injuries. It should be noted that under this section, very few respondents indicated injury status, leaving a large number of missing cases in the data. Under falls, 56.4% of alcohol consumers, of a total of 676 respondents, experienced activity-limiting only injuries, leaving 35.9% who experienced the same kind of injuries as non-drinkers. For transport accidents, 84.3% of a total of 89 respondents were alcohol consumers, compared to 12.4% who were non-drinkers. For bumped/crushed injuries, more alcohol consumers than non-drinkers experienced injuries, (53.7% of alcohol consumers, out of 283 respondents compared to 41.3% of non-drinkers). This pattern where alcohol consumers form the majority of respondents who experienced injuries follows through all the types of injuries (Table 10). Again, small numbers precluded testing the significance of these data.

Table 10: Type of Injury and Activity-Limiting only and Both Limiting and Non-Limiting Combined; (drinkers & non-drinkers only)

		Fall	Transport accident	Bumped/ Crushed	Sharp/hot object	Exertion	Other
Activity-limiting	Drinkers	56.4%	84.3%	53.7%	60.9%	54.9%	61.7%
	Non-drinkers	35.9%	12.4%	41.3%	24.7%	35.2%	25.5%
	Total N	676	89	283	166	244	94
Limiting & Non-limiting	Drinkers	57.9%	84.6%	67.8%	87.5%	66.6%	71.5%
	Non-drinkers	32.9%	7.7%	25%	12.5%	22.2%	14.3%
	Total N	76	13	28	8	18	7

For the injuries indicated in Table 10, more alcohol consumers than non-drinkers were hospitalized for injuries suffered to various parts of the body. However, it is of importance to note that it is not known whether alcohol was a factor in these injuries. It must also be noted that it is not known if these injuries were intentional or unintentional.

The data did not provide information on respondents driving while drunk but rather provided information as to whether consumers were passengers with a drunk driver (Table 11). Sixty-six percent of regular drinkers and 22.4% of occasional drinkers, out of 595 respondents, indicated yes to being passengers with a drunk driver. Only 8.1% of non-drinkers ever stated being passengers with drunk drivers. This risk of driving in a vehicle with a drunk driver is probably due to the fact that respondents themselves consume alcohol and so do not find anything wrong with

being in the same vehicle with a drunk driver. It may be an indicator of peer drinking behavior, a variable not examined in this study.

Table 11: Type of Drinker and Passenger with Drunk Driver

		Passenger with drunk driver		Total
		YES	NO	
Type of drinker	REGULAR DRINKER	66.1%	26.9%	2089
	OCC. DRINKER	22.4%	24.1%	1653
	FORMER DRINKER	3.5%	8.8%	582
	NEVER DRANK	8.1%	40.2%	2594
Total N		595	6323	6918

(Note: A total of 1791 missing cases did not indicate answer)

Summary of Key Findings

Adolescent females in this study were grouped into two categories, a younger age group comprised of 12 to 14 year olds, and an older age group comprised of 15 to 19 year olds. All respondents in the 12 to 14 year old group had less than secondary education, which suggests that they likely were in primary or high school or not in school at all. For the older age group (15 to 19 years), the majority (65.7%) had less than secondary education, an indication that they were also either in high school or not in school at all. The vast majority of respondents (97.8%) are single and live with parents and siblings.

The results indicate that alcohol consumption is prevalent among adolescent females aged 15 to 19 years. Seventy-three percent of this age group consume alcohol. Of this percentage, 44% do so, on a regular basis and 29% are occasional

drinkers. This compares with 21% of alcohol consumers in the 12 to 14 year old group, of whom 5% are regular drinkers and 16% are occasional drinkers. This indicates that more drinkers in the younger age group are occasional drinkers, whereas more drinkers in the older age group are regular drinkers. Comparing regular and occasional drinkers, regular drinkers formed the majority of all respondents who indicated that alcohol is consumed from a range of having five or more drinks less than once a month to more than once a week. The majority of respondents in this study were whites (88.2%) and over half of them (56.6%) were alcohol consumers. Of the 56% alcohol consumers, 31.4% were regular drinkers and 25.2% were occasional drinkers. Of the 37% visible minorities in the study, 18.7% were regular drinkers and 18.5% were occasional drinkers. A larger percentage of visible minority respondents have never drank, suggesting that alcohol consumption is more prevalent among white adolescent females than adolescent females of visible minority groups.

Adolescent females aged 15 to 19 years were noted to be more likely to experience alcohol dependence and depression than the 12 to 14 year olds. Also more alcohol consumers than non- consumers had experienced depression occurring mostly in the fall and winter seasons. The results may indicate that sexual activity usually starts from or after age 15 years as all respondents who indicated being sexually active were in the 15 to 19 year group, but these data are difficult to assess because of a low response rate to the questionnaire items in this area. Of this group, alcohol consumers formed the majority of those who were sexually active in the past year (67.4% regular drinkers and 23.9% occasional drinkers). Only 3.6% of non-drinkers who responded

reported being sexually active, an indication that alcohol consumers appear to be more sexually active than the non consumers; and regular drinkers appear to be more sexually active than occasional drinkers. Regular drinkers may also be more likely to engage in unprotected sex.

Suicide is found to be prevalent among adolescent females from age 15 years since all respondents who had considered suicide in their lifetime were in the 15 to 19 year group. Drinkers formed the majority (87.1%) of these respondents, with regular drinkers reporting double the suicidal ideation than occasional drinkers. Suicide thoughts in former drinkers and those who had never drank were considerably lower. Both regular and occasional drinkers appear more likely to experience falls than non-drinkers. More detailed analysis of data, including tests of significance are needed to substantiate these findings in future research.

Chapter Five

Discussion and Conclusions

Alcohol consumption has been identified to be prevalent among adolescent females from age 15 years, with only 19% reporting never having consumed alcohol. This consumption is correlated with other factors such as alcohol dependence, depression, suicidal ideations, and sexual risk behaviors. Therefore it is important to discuss what programs, if any, are in place, the messages being conveyed to this population, and what could be done.

Adolescent female alcohol consumption and correlates-linkage with adolescent development theories

Erikson noted in his theory of identity development that in their search for identity, adolescents conform to peer expectations to help them find out how certain roles fit them. This creates a new form of dependency on the peer group, which replaces parental dependency. The peer group, the clique, and the gang therefore help the individual in the search for a personal identity since they provide both role models and personalized social feedback. Relating this to adolescent females in this study, it can be deduced that adolescent females aged 15 to 19 years are in the process of identity search; and are likely to experience peer dependency to achieve it. They may consequently be more likely to consume alcohol and engage in other risk behaviors such as unprotected sex and riding with a drunk driver in order to belong to their peer group. According to Sullivan's interpersonal theory of adolescent development, positive interpersonal relationships are essential for a happy and satisfying life. This

is due to the reason that relationships with other people influence how one develops and what one becomes, as a result of socialization. Therefore adolescent females, especially from age 15 years, whether in high school or not, are likely to be influenced by their relationships with other people. If most adolescent females were receiving positive feedback for initiating and becoming alcohol consumers in their relationships with others, then according to Sullivan, they would become alcohol consumers. This is to seal their interpersonal relationships with others.

Carol Gilligan also noted that it is during adolescence that females lose their confident worldview of pre-adolescence where they are outspoken and claim their authority without inhibitions. Therefore adolescent females may be taking to alcohol consumption by way of not losing their confident worldview, especially from age 15 years when alcohol consumption and other risk behaviors are increased. Considering Margaret Mead's description of pre-figurative culture characterized by the availability of computers, the Internet and increasing sophisticated technological advancement, it can be said that adolescent females of this century find themselves in such a culture where, related to technological advancement, parental values and authority may be lost. The role of parents decline and their skills and knowledge are considered out dated. Once again, peers from their age-cohort rather than elders represent the future for adolescents. Alcohol consumption is part of the liberty that comes with this era and adolescent females have taken to enjoying this liberty, which is presented to them through advertisements in the media, Internet, and magazines.

Programs and Policies for Adolescent Females

Several alcohol prevention programs for females have not worked due to the fact these programs were originally planned for males. As such, females' specific needs such as differences in tolerance levels, blood alcohol concentration levels, toxicity, physical and emotional effects of alcohol were not addressed (Angrove & Fothergill, 2003; Dunn, Lau, & Cruz, 2002; Spence & Rohweder, 1994). It is therefore necessary to plan new programs (specifically for adolescent females) that could be piloted for efficacy. Alcohol counseling is one of the suggested ways to prevent use and misuse. Sieck, Heirich and Major (2004) noted that health promotion campaigns tend to focus on physical activity, weight management, stress reduction or nutrition, ignoring the fact that alcohol consumption affects each of them. A more comprehensive approach based on a thorough knowledge of health promotion strategies is needed.

Health Promotion Strategies

The Ottawa Charter for Health Promotion was developed as a framework that defines health promotion from a broad perspective of all that could affect health. These health determinants were viewed as pre-requisites for health and included peace, shelter, education, food, income, stable eco-system, sustainable resources, social justice and equity (Hamilton & Bhatti, 1996). Of all these pre-requisites, education may be important to emphasize with the population group in this study, as health education programs aimed specifically at adolescent females could be embedded into school curricula to create awareness and sensitize adolescent females

prior to 15 years of age when more drinking behaviors start. Because of the breadth of determinants of health behaviors however, emphasis on this alone would be inadequate. Rather, all the pre-requisites to healthy decisions about the use of alcohol need to be addressed for the most effective preventive outcomes for alcohol consumption. The Charter recognized that access to these pre-requisites could not be ensured by the health sector alone. Coordinated action is required from other sectors of governmental organization, industry, and the media. In order for such an integrated model of health promotion to be achieved, the Charter called for action in five areas:

1. Building healthy public policy to ensure that policy developed by all sectors contributes to health promoting conditions.
2. Creating supportive environments in terms of physical, socio-economic, cultural and spiritual that recognize the changing nature of society in the area of technology and work organization.
3. Strengthening community action so that communities have the capacity to set priorities and make decisions on issues that affect their health.
4. Developing personal skills to enable people to have the knowledge and skills to meet life's challenges and to contribute to society.
5. Reorienting health services to create systems that focus on the needs of the whole person and invite a true partnership among the providers and users of the services.

In order to comprehensively approach adolescent female alcohol consumption as a health issue, each of these five areas needs to be considered. The following

section addresses how these could be incorporated as an overall approach to health promotion for the population group of this study.

Building Healthy Public Policy

Healthy Public Policy is an important consideration for adolescent female alcohol consumption patterns since it embodies the laws about the making, advertising and sale of alcohol. For example, to prevent adolescent female alcohol consumption it is important to consider the various kinds of advertisements specifically directed at this population in the magazines they read, the radio and television programs they watch, the movies they are drawn to, the Internet activities with which they become involved and the public events they attend. Alcohol companies are frequently sponsors of music and sporting activities that adolescent females attend. The messages given at such events could be powerful in relation to self-image, self-esteem and how this might relate to decisions about whether or not to consume alcohol. Should the impact of such advertising be examined in terms of the effect it has on adolescent female alcohol consumption? Does such advertising normalize alcohol as an everyday activity and encourage adolescent female alcohol consumption? Such questions need to be addressed as Public Policy with the implementation of subsequent legislation about appropriate promotion of alcohol consumption by adolescent females.

Creating Supportive Environments

The call for supportive environments includes physical, social, economic, cultural and spiritual aspects of the adolescent females' environments that recognize the rapidly changing nature of society, particularly in the areas of technology and

work that ensure positive impacts on their health. Attention needs to be paid to cultural variations in decisions that are made about alcohol consumption. Visible minorities included in this study for instance may require different kinds of supportive environments regarding alcohol consumption decisions compared to the pressures experienced by the white adolescent females. In general, supportive school and community environments, free of messages about alcohol consumption as a normal activity for adolescent females might include peer support groups for adolescent females at school that discourage alcohol consumption as a healthy option, teen nights at local community halls, and music festivals with non-alcoholic messages that provide adolescent females alternative ways to spend their time. Educational sessions designed to support families with adolescent females might also be considered as a strategy to create supportive environments for this population group.

Strengthening Community Action

The Charter called for strengthening community action so that communities have the capacity to set priorities and make decisions on issues that affect their health. This might be accomplished via a bottom-up approach whereby adolescent females in high schools are given the opportunity to set goals, plan and implement a program of their choice on alcohol prevention. For instance, in a current study on strategies for reduction and cessation of alcohol use by Metrik, Frissell, McCarthy, D'Amico and Brown (2003), adolescents were the given opportunity to list strategies for reducing and stopping alcohol consumption. The five most frequently identified change strategies to alter drinking were environmental exposure management (avoid drinking

situations); informal interpersonal support (talk to a friend); formal aids (peer support group, counselor); behavioral self-management (limit consumption) and alternative activities (recreation, sports). The authors assessed that informal interpersonal supports were consistently endorsed for all change situations. Behavioral self-management strategies were viewed as more useful for reduction of drinking and formal aids more critical for cessation efforts.

If such program suggestions come from the adolescent females themselves, they might put more efforts into the implementation of such programs to make them successful. It is therefore suggested that adolescent females in high schools throughout Canada be given opportunities to develop strategies for reducing and stopping alcohol consumption. Their suggestions could guide policy makers and practitioners in developing successful programs for this population. This strategy has implications for practice as the involvement and participation of adolescent females empowers them to address issues concerning them.

Developing Personal Skills

The Ottawa Charter also called for action in developing personal skills to enable people to have the knowledge and skills to meet life's challenges and to contribute to society. An educative program on alcohol prevention in high schools across Canada would be another way to support the development of adolescent females' knowledge and skills in helping them meet life's challenges and to ultimately contribute to society. One example of such a program is the Alberta Learning (2002) Career and Life Management Program (CALM). The CALM program's goal is to

enable students to make well informed, considered decisions and choices in all aspects of their lives and to develop behaviors and attitudes that contribute to the well-being and respect of self and others, presently, and in the future. The three expected general outcomes outlined by Alberta Learning (2002) for students who take the CALM program are to: 1) apply an understanding of the emotional or psychological, intellectual, social, spiritual and physical dimensions of health; and the dynamic interplay of these factors in managing personal well-being; 2) make responsible decisions in the use of finances and other resources that reflect personal values and goals and demonstrate a commitment to self and others; and, 3) develop and apply processes for managing personal lifelong career development.

Students who take the program are encouraged to explore the areas that are of most relevance to their lives. For instance, the section on 'Living with Alcohol; You, Me and the Kids: The Teen Years' could be publicized and promoted to adolescent females. Because CALM addresses all aspects of health such as self-esteem, self-image, mental well being, and social health, it appears to be an ideal program for promoting health and for helping adolescent females to make decisions about alcohol consumption. This is particularly relevant to adolescent females who are subjected to media images of the 'perfect' body image and a generic female way of being in the world. Adolescent females exploring their identity may be vulnerable to such images and when comparing themselves may lead to feelings of inadequacy and hence, decisions to consume alcohol. The CALM program could be an opportune time to explore the complexities of self-image and self-esteem, helping adolescent females to

look critically at the image promoted in the popular media and to counter them with other options. Programs like CALM need to be supported and ultimately evaluated in terms of their efficacy.

Reorienting Health Services

The call for action in reorienting health services is to create systems, which focus on the needs of the whole person, and to invite a true partnership among the providers and users of the services. In order to focus on the needs of the whole person, this reorientation of health services must embody systems which would address not only physical needs of a person, as has been the case for many years, but also the psychological, social, economic and to an extent, cultural and spiritual needs. In view of this, the psychological needs of adolescent females need to be considered for the implementation of an effective alcohol prevention program to address the problem of adolescent female alcohol consumption. As well, current social and economic situations such as technological advancement, the availability of the Internet and computers need to be considered in planning a holistic health program that is accessible and affordable to all.

According to Heirich and Sieck (2000), a proactive program that embeds alcohol risk reduction in a general health promotion context can be an effective way to reach alcohol consumers at any level of risk. By being proactive, counselors do not wait for clients to approach them when the client is ready for change, but rather the counselor reaches out to clients regularly irrespective of whether they are seeking behavior change. For those ready for behavior change, such counseling programs

provide support and specific skills. For those not ready for behavior change, regular contacts help to keep attention focused on health and provide opportunities for people to become ready to address health risks (Erfurt, Foote, Heirich, & Brock, 1995). Such proactive counseling programs can also be introduced in high schools across Canada targeting adolescents from age 12 years when alcohol consumption is minimal as indicated by the results of this study, before they reach senior high where consumption increases. This will help them to become ready to address the issue as they progress in age and school. For older adolescents aged 15 years and above, the majority of whom are already consuming alcohol, proactive counseling programs will over-rule the difficulty of taking a step for help as well as provide them with the necessary support. It is necessary that such programs address females' specific issues of peer conformity, identity problems, relationships and other psychological issues that correlate with alcohol consumption, such as depression and suicide attempts.

It is important to note that alcohol preventive programs cannot be planned and implemented without taking into consideration risk and protective factors related to the individual, family, school, peers and one's community or neighborhood in general. For example, it would seem that if certain risk factors exist in the school environment such as academic failure, negative, disorderly and unsafe school environment and lack of clear school policies regarding drug use, efforts to promote alcohol prevention programs would fail. On the contrary, if protective factors such as a caring and supportive school environment, clear standards and rules for appropriate behavior,

youth participation, involvement and responsibility in school tasks and decisions exist, alcohol preventive programs would be more likely to succeed.

The community or neighborhood of adolescent females is also very important. If they live in neighborhoods where several risk factors such as substance use and gambling, high crime rates and alienation exist, they are likely to pick up those habits and behaviors, as those are the messages being sent to them. A study in the United States for instance (Alcoholism & Drug Abuse Weekly, 2003), found that youths were overexposed to beer and spirit advertisements on radio. Those youths under the legal drinking age of 21 years were the most exposed because the producers of alcoholic beverages targeted them with strategically placed advertisements on popular youth radio shows. This blatant call for youths to drink caused the members of Congress to address the issue. This is an example where for health promotion efforts on alcohol prevention to succeed, protective factors such as a caring and supportive community are necessary. Other protective factors that need to be considered include: counter-advertising messages, positive expectations of youth and community-sponsored activities on health promotion.

Future Research and Recommendations

In view of the above identified strategies, it is recommended that public/ community health professionals work proactively with adolescent females in Canadian schools before alcohol consumption is even considered as an option. This work would fully involve the adolescent females in the development and implementation of programs that would be meaningful to them. An appreciation of, and building on the

theories of adolescent development would be a necessary component of this work as well.

There is the need to conduct more research on adolescent females bearing in mind health promotion policies and theories using both quantitative and qualitative research methods to obtain rich and vital data. The data used in this study are quantitative and do not give details of why certain answers were given. Also the information analyzed is limited to answers given to the questions asked in the survey. Some key questions of interest in addressing the issue, such as questions on peer involvement and respondents driving under the influence of alcohol, were not asked in the survey. Coupled with this are major limitations imposed by the cross-sectional nature of the data because it relies on respondents for past history. A longitudinal design would be more useful in a future research for attributions of causality. As well, comparison with male data was not made. Such comparison would be useful in a future study to ascertain differences of practice and/or relevance.

Conclusion

It has been well documented that traditional alcohol treatment programs have failed to work for females with alcohol use disorders because the treatments were originally designed for male alcoholics without considering the physical and emotional needs of females (Angrove & Fothergill, 2003; Dunn, Lau, & Cruz, 2002, Marcenko, Spence, & Rohweder, 1994). In addition to this, several factors have been identified as barriers to females seeking treatment for alcohol problems. Of these factors, Copeland and Hall (1992) identified low self-esteem, stigma, fear of sexual

harassment and inadequate child-care facilities for mothers as barriers to treatment seeking. Zilberman et al. (2002) also added that females with substance-related problems face intense social stigma. This stigma and related shame and guilt feelings are associated with less treatment seeking. In addition to this, some females also face opposition from some partners who are themselves substance abusers and so prevent such females from entering and maintaining treatment. Zilberman et al. (2002) also noted that many professionals in non-addiction treatment settings feel more uncomfortable asking females than males about their substance use. In an analysis of U. S. national data on drug abuse, Wu, Hoven, Tiet, Kovalenko, and Wicks (2000) concluded that adolescents with alcohol problems did not receive treatment. White adolescents were more likely to receive alcohol treatment services than non-whites and adolescents were more likely to seek treatment if the alcohol use was causing problems at school, home or other settings.

The secondary analysis of the CCHS data undertaken for this study has focused on adolescent female alcohol consumption, and other related life-style risk behaviors such as depression, alcohol dependence, sexual behaviors, suicide and injuries. The analysis revealed that alcohol consumption is prevalent among adolescent females aged 15 to 19 years, most of whom had less than a secondary level of education. From a developmental and social perspective, this is problematic as members of the same age group also experienced higher levels of alcohol dependence, depression, suicide and sexual risk behaviors. Health Promotion Strategies identified

in the Ottawa Charter have been suggested as a framework by which to approach the problem of adolescent female alcohol consumption.

The significance of this study consequently lies in its focus on adolescent females' alcohol consumption and its specific correlates. More importantly are the theories of adolescence that have helped to explain some specific female issues, most often ignored in studies of this kind. It is hoped that highlights of the Ottawa Charter and the CALM program in connection with adolescent females' alcohol consumption in this study, will help readers and the general public in taking up and addressing the issue, for a better future for adolescent females.

The strength of this study can be seen in its attempt to single out adolescent females aged from 12 to 19 years, from a large survey sample, to identify the important issues concerning their drinking behaviors. This attempt is important because adolescence is a developmental stage where many people experience conflicts as highlighted in the literature, and have to make choices that may have implications for later adult life. This research highlights that alcohol consumption in adolescents involves females as well as males.

References

Alberta Alcohol and Drug Abuse Commission (2003). The Alberta youth experience survey 2002: Summary report. Alberta Alcohol and Drug Commission, Edmonton, Canada.

Alberta Learning (2002). www.learning.gov.ab.ca/k_12/curriculum/bySubject/healthpls/calm.pdf

Alcohol & Drug Abuse Weekly (2003). Study finds youths overexposed to beer, spirit ads on radio: Members of congress hint at hearing on issue. *15*(14), 3-4.

Ali, J. (2002). Mental health of Canada's immigrants. *Supplement to Health Reports, 13*,1-12

Angrove, R. & Fothergill, A. (2003). Women and alcohol: Misrepresented and misunderstood. *Journal of Psychiatric & Mental Health Nursing 10*(2), 213-9.

Bailey, S., Pollock, N., Martin, C., & Lynch, K.G. (1999). Risky sexual behaviors among adolescents with alcohol disorders. *Journal of Adolescent Health, 25*, 179-181.

Baroana, E.A., Abittan, C.S., Dohmen, K., Moretti, M., Pozzato, G., Chayes, Z.W., et al. (2001). Gender differences in pharmacokinetics of alcohol. *Clinical and Experimental Research, 25*(4), 502-507.

Becker, K.L., & Walton-Moss, B. (2001). Detecting and addressing alcohol abuse in women. *Nurse Practitioner, 26*(10), 13-16, 19-23.

Beirness, D.J., & Simpson, H.M. (2002). *The safety impact of lowering the BAC limit for drivers in Canada.* Ottawa: Traffic Injury Research Foundation.

Beland, Y (2002). Canadian Community Health Survey—Methodological overview. *Health Reports, 13*(3), 9-14.

Bergman, H., & Kallman, H. (2003). Swedish women have developed more risky and more harmful alcohol drinking habits. A survey of alcohol drinking changes among Swedes between 1997-2001. *Larkartidningen, 100*(12), 1028-30.

Bien, T.H., Miller, W.R., & Tonigan, J.S. (1993). Brief interventions for alcohol problems: A review. *Addiction, 88*(3), 315-36.

Blake, T.L. (2002). A conceptual framework for examining adolescent identity, media influence and social development. *Review of General Psychology, 6*(1), 73-91.

Bonomo, Y., Coffey, C., Wolfe, R., Lynskey, M., Bowes, G., & Patton, G. (2001). Adverse outcomes of alcohol use in adolescents. *Addiction, 9* (10), 1485-1496.

Brady, K.T., & Randall, C.L. (1999). Gender differences in substance use disorders. *Psychiatric Clinics of North America, 22*(2), 241-252.

Brown, L. M., & Gilligan, C. (1992). *Meeting at the crossroads: Women's psychology and girls' development.* New York: Ballantine Books.

Bukstein, O.G. (1995). *Adolescent substance abuse: Assessment, prevention and treatment.* New York: John Wiley.

Car-Gregg, M.R., Enderby, K.C., & Grover, S.R. (2003). Risk taking behavior of young women in Australia: Screening for health-risk behaviors. *Medical Journal of Australia, 178*(12), 601-4.

Chamberlain, E., & Solomon, R. (In Press). The case for a 0.5% criminal law blood alcohol concentration limit for driving. *Injury Prevention.*

Clark, D.B., & Bukstein, O.G. (1998). Psychopathology in adolescent alcohol abuse and dependence. *Alcohol Health & Research World, 22*(2), 117-21.

Clark, D.B., De Bellis, M.D., Lynch, K.G., & Cornelius, C.S. (2003). Physical and sexual abuse, depression and alcohol use disorders in adolescents: Onsets and outcomes. *Drug & Alcohol Dependence, 69*(1), 51-60.

Cogswell, M.E., Weisberg, P., & Spong, C. (2003). Cigarette smoking, alcohol use and adverse pregnancy outcomes: Implications for micronutrient supplementation. *Journal of Nutrition, 133*(5 Suppl 2), 1722S-1731S.

Cohen, P., Cohen, J., Kasen, S., Velez, C.N., & Hartmark, C. et al. (1993). An epidemiological study of disorders in late childhood and adolescence: Age and gender specific prevalence. *The Journal of Child Psychology and Psychiatry, 34*, 851-867.

Cook, R.L., Pollock, N.K., Rao, A.K., & Clark, D.B. (2002). Increased prevalence of herpes simplex virus type 2 among adolescent women with alcohol use disorders. *Journal of Adolescent Health, 30,* 169-174.

Copeland, J., & Hall, W. (1992). A comparison of women seeking drug and alcohol treatment in a specialist women's and two traditional mixed-sex treatment services. *British Journal of Addiction, 87,* 1293-1302.

Del Boca, F.K. (1994). Sex, gender and alcoholic typologies. In T.F. Barbor, V. Hesselbrock, R.E. Meyer, & W.J. Shoemaker (Eds.), *Types of alcoholics: Evidence from clinical, experimental, and genetic research, 708*, 34-48. New York: Annals of the New York Academy of Sciences.

Deykin, E.Y., Buka, S.L., & Zeena, T.H. (1992). Depressive illness among chemically dependent adolescents. *American Journal of Psychiatry, 149,* 1341-1347.

Dunn, M.E., Lau, H.C., & Cruz, I.Y. (2000). Changes in activation of alcohol expectancies in memory in relation to changes in alcohol use after participation in an expectancy challenge program. *Experimental and Clinical Psychopharmacology, 8*(4), 566-575.

Edwards, G., Marshall E. J., & Cook, C.C.H. (1997). *The treatment of drinking problems: A guide for the helping professions (*3rd ed). Cambridge, MA: Harvard University Press.

Ettorre, E. (1997). *Women and alcohol: Private pleasure or a public problem?* London: The Women's Press.

Ettorre, E. (1992). *Women and substance Use.* London: Macmillan Press.

Fowler, Floyd J. Jr. (1993). *Survey research methods.* Sage Publications: Newbury Park, CA.

Gentilello, L.M., Rivara, F.P., Donovan, D.M., Villaveces, A., Daranciang, E., Dunn, C., et al. (2000). Alcohol problems in women admitted to a level 1 trauma center: A gender-based comparison. *The Journal of Trauma Injury, Infection and Critical Care, 48*(1), 108-120.

Gilligan, C., Lyons, N.P., & Hanmer, T.J. (1990). *Making connections: The relational worlds of adolescent girls at Emma Willard School.* Cambridge, MA: Harvard University Press.

Grant, B. F. (2001). Early age at onset associated with alcohol use disorders. *Journal of Substance Abuse, 12,* 493-504.

Gross, W.C., & Billingham, R.E. (1998). Alcohol consumption and sexual victimization among women. *Psychological Representative, 82*(1), 80-82.

Hamilton, N., & Bhatti, T. (1996). *Population health promotion: An integrated model of population health and health promotion.* Ottawa: Health Promotion Development Division.

Harper, A. R. (2001). Adolescent development and psychopathology. *Child & Adolescent Psychiatry, 40*(11), 1349-1350.

Hawkins, J.D., Catalano, R.F., & Miller, J.Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychological Bulletin, 112*(1), 64-105.

Hochgraf P.B., Zilberman, M.L., & Andrade, A.G. (1995). Women alcoholics: Social, demographic and clinical characteristics in a Brazilian sample. *Alcohol Alcohol, 30,* 427-432.

Hohman, M.M., Shillington, A.M., & Baxter, H.G. (2003). A comparison of pregnant women presenting for alcohol and other drug treatment by CPS status. *Child Abuse & Neglect, 27*(3), 303-317.

Huselid, R.F., & Cooper, M.L. (1992). Gender roles as mediators of sex differences in adolescent in adolescent alcohol use and abuse. *Journal of Health and Social Behavior, 33,* 348-362.

Johnston, L.D., O'Malley P.M., & Bachman, J.G. (1993). National survey results on the drug use from monitoring the future study, 1975-1992 (NIH Publication 93-3597, vol. 1, Secondary School Students). Rockville, MD: National Institute on Drug Abuse.

Kann, L., Kinchen, S.A., & Williams, B.I. (1998). Youth risk behavior surveillance – United States, 1997. CDC *Surveillance Summary, 47,* 1-89.

Kessler, R.C., Crum, R.M., Warner, L.A., Nelson, C.B., Schulenberg, J., & Anthony, J.C. (1997). Lifetime co-occurrence of DSM-III-R alcohol abuse and dependence with other psychiatric disorders in the national comorbidity survey. *Archives of General Psychiatry, 54*(4), 313-321.

Kilpatrick, D.G., Acierno, R., Resnick, H.S., & Saunders, B. (1997). A two year longitudinal analysis of the relationships between violence, assault and substance use in women. *Journal of Consulting & Clinical Psychology, 65*(5), 834-47.

King, C.A., Ghaziuddin, N., McGovern, L., Brand, E., Hill, E., & Naylor, M. (1996). Predictors of comorbid alcohol and substance abuse in depressed adolescents. *American Academy of Child and Adolescent Psychiatry, 35*(6), 743-751.

Kingree, J.B., Thompson, M.P., & Kaslow, N.J. (1999). Risk factors for suicide attempts among low income women with a history of alcohol problems. *Addictive Behaviors, 24*(4), 583-587.

Lewis, C.E., & Bucholz, K.K. (1991). Alcoholism, antisocial behavior and family history. *British Journal of Addiction, 86,* 177-194.

Locke, T.F., & Newcomb, M.D (2001). Alcohol involvement and dysphoria: A longitudinal examination of gender differences from late adolescence to adulthood. *Psychology of Addictive Behavior, 15*(3), 227-236.

Malik, S., Sorenson, S.B., & Aneshensel, C.S. (1997). Community and dating violence among adolescents: Perpetration and victimization. *Journal of Adolescent Health, 21,* 291-302.

Mann, R.E., Smart, R.G., Stoduto, G., Beirness, D., & Lamble, R. (2002). The early effects of Ontario's Administrative Driver's License Suspension Law on driver fatalities with a BAC > 80mg%. *Canadian Journal of Public Health, 93*(3), 176-180.

Marcenko, M.O., Spence, M., & Rohweder, C. (1994). Psychological characteristics of pregnant women with and without a history of substance abuse. *Health & Social Work, 19*(1),17-22.

Metrik, J., Frissell, K.C., McCarthy, D.M., D'Amico, E.J., & Brown, S.A. (2003). Strategies for reduction and cessation of alcohol use: Adolescent preferences. *Alcoholism: Clinical & Experimental Research, 27(1),*74-80.

Miller, B.A., Downs, W.R., & Tesla, M. (1993). Interrelationships between victimization experiences and women's alcohol use. *Journal of Studies on Alcohol, supp.11,* 109-117.

Muuss, R. E. (1996). *Theories of adolescence.* (6th ed). New York: McGraw-Hill.

National Highway Traffic Safety Administration. *2001 reports.* United States Department of Transportation. www.nhtsa.dot.gov

Patterson, D.G. (1995). Alcoholism: Treating the 'second sex.' *Irish Journal of Psychological Medicine, 12*(2), 46-47.

Quinlan, K.P., Brewer, R.D., Sleet, D.A., & Delinger, A.M. (2000). Characterisitics of child passenger deaths and injuries involving drinking drivers. *Journal of the American Medical Association 283,* 2249-2252.

Reinhertz, H.A., Giaconia, I.M., Lefkowitz, E.S., Pakiz, B., & Frost, A.K. (1993). Prevalence of psychiatry disorders in a community population of older adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 32,* 369-377.

Rohde, P., Lewinson, P.M., & Seeley, J.R. (1996). Psychiatric comorbidity with problematic alcohol use in high school students. *Journal of the American Academy of Child & Adolescent Psychiatry, 35,* 101-109.

Sieck, C.J., Heirich, M., & Major, C. (2003). Alcohol counseling as part of general wellness counseling. *Public Health Nursing, 21(2),*137-146.

Shults, R.A., Elder, R. W., Sleet, D.A., Nicholas, J.L., & Alao, M.O. (2001). Reviews of the evidence regarding interventions to reduce alcohol-impaired driving. *American Journal of Preventive Medicine, 21,* 66-90.

Stowell, R.J., & Estroff, T.W. (1992). Psychiatric disorders in substance-abusing adolescent inpatients: A pilot study. *Journal of the American Academy of Child & Adolescent Psychiatry, 31,* 1036-1040.

Substance Abuse and Mental Health Services Association. Findings from 1999 National Household Survey on Drug Abuse (NHSDA). http://www.samha/gov/oas/nhsda.htm. Accessed October 10, 2003.

Substance Abuse and Mental Health Services Association. Findings from 2001 National Household Survey on Drug Abuse (NHSDA). http://www.samha/gov/oas/nhsda.htm. Accessed October 10, 2003.

Transport Canada. Statistical data. Ottawa: Transport Canada; 2000. www.tc.gc.ca/pol/en/t-facts_e/Safety_Data_Menu_htm.

Van Den Bergh N. (1991). *Having bitten the apple: Feminist perspective on addictions.* New York: Springer Publishing Co.

White, A.M., Jamieson-Drake, D.W., Swartzwelder, H., & Scott, H. (2002). Prevalence of alcohol-induced blackouts among college students: Results of an E-mail survey. *Journal of American College Health, 51*(3), 117-142.

Woodward, C.A., Chambers, L.W., & Smith, K.D. (1983). *Guide to improved data collection in health and health care surveys.* Ottawa: Canadian Public Health Association.

Wu, P., Hoven, C.W., Tiet, Q., Kovalenko, P., & Wicks, J. (2002). Factors associated with adolescent utilization of alcohol treatment services. *American Journal of Drug & Alcohol Abuse, 28*(2), 353-69.

Zilberman, M.L., Tavares, H., Blume, S.B., & el-Guebaly, N. (2002). Towards best practices in the treatment of women with addictive disorders. *Addictive Disorders and Their Treatment, 1*(2), 39-46.

Zucker, R.A. (1987). The four alcoholisms: A developmental account of the etiologic process. In P.C. Rivers & N.B. Lincoln (Eds.), *Alcohol and addictive behavior* (pp. 27-83). Lincoln: University of Nebraska Press.

APPENDIX

Questionnaire

ALCOHOL

AL_BEG
AL_QINT **Now, some questions about %your/FNAME's% alcohol consumption. When we use the word drink it means:**

- **one bottle or can of beer or a glass of draft**
- **one glass of wine or a wine cooler**
- **one drink or cocktail with 1 and a 1/2 ounces of liquor.**

INTERVIEWER: Press <Enter> to continue.

AL_Q1 **During the past 12 months, that is, from %date one year ago% to yesterday, %have/has% %you/FNAME% had a drink of beer, wine, liquor or any other alcoholic beverage?**

ALCA_1

1 Yes
2 No (Go to AL_Q5B)
DK, R (Go to AL_END)

AL_Q2 **During the past 12 months, how often did %you/he/she% drink alcoholic**
ALCA_2 **beverages?**

1 Less than once a month
2 Once a month
3 2 to 3 times a month
4 Once a week
5 2 to 3 times a week
6 4 to 6 times a week
7 Every day

AL_Q3 **How often in the past 12 months %have/has% %you/he/she% had 5 or more drinks on one occasion?**

ALCA_3

1 Never
2 Less than once a month
3 Once a month
4 2 to 3 times a month
5 Once a week
6 More than once a week

AL_Q5 **Thinking back over the past week, that is, from %date last week% to**
ALCA_5 **yesterday, did %you/FNAME% have a drink of beer, wine, liquor or any other alcoholic beverage?**

1 Yes
2 No (Go to AL_C8)
DK, R (Go to AL_C8)

AL_Q5A **Starting with yesterday, that is %day name%, how many drinks did %you/FNAME% have:**

(If R on first day, go to AL_C8)
(MIN: 0 MAX: 99 for each day; warning after 12 for each day)

ALCA_5A1	1	**Sunday?**
ALCA_5A2	2	**Monday?**
ALCA_5A3	3	**Tuesday?**
ALCA_5A4	4	**Wednesday?**
ALCA_5A5	5	**Thursday?**
ALCA_5A6	6	**Friday?**
ALCA_5A7	7	**Saturday?**

Go to AL_C8

AL_Q5B **%Have/Has% %you/he/she% ever had a drink?**
ALCA_5B

1 Yes
2 No (Go to AL_END)
DK, R (Go to AL_END)

AL_Q6 **Did %you/he/she% ever regularly drink more than 12 drinks a week?**
ALCA_6

1 Yes
2 No (Go to AL_C8)
DK, R (Go to AL_C8)

AL_Q7 **Why did %you/he/she% reduce or quit drinking altogether?**
INTERVIEWER: Mark all that apply.

ALCA_7A	1	Dieting
ALCA_7B	2	Athletic training
ALCA_7C	3	Pregnancy
ALCA_7D	4	Getting older
ALCA_7E	5	Drinking too much / drinking problem
ALCA_7F	6	Affected - work, studies, employment opportunities
ALCA_7G	7	Interfered with family or home life
ALCA_7H	8	Affected - physical health
ALCA_7I	9	Affected - friendships or social relationships
ALCA_7J	10	Affected - financial position
ALCA_7K	11	Affected - outlook on life, happiness
ALCA_7L	12	Influence of family or friends
ALCA_7M	13	Other – Specify

AL_C8 If age > 19, go to AL_END.

AL_Q8 **Not counting small sips, how old %were/was% %you/he/she% when %you/he/she% started drinking alcoholic beverages?**
ALCA_8

INTERVIEWER: Drinking does not include having a few sips of wine for religious purposes.

|_|_|_| Age in years

(MIN: 5) (MAX: current age)

AL_END Go to next module

DRIVING UNDER INFLUENCE

DU_BEG Selection of the module is indicated using a Health Region number or province code.

DU_C1 If proxy interview, go to DU_END.

DU_Q1 **The next questions are about drinking and driving. In the past 12 months, have you been a passenger with a driver who had too much to drink?**

DUIA_1

1 Yes
2 No
DK, R (Go to DU_END)

DU_C2 If age < 16, go to DU_END.

DU_Q2 **Do you have a valid driver's license for a motor vehicle?**
DUIA_2 **(Include cars, vans, trucks, motorcycles.)**

1 Yes
2 No (Go to DU_END)
DK, R (Go to DU_END)

DU_Q3 **In the past 12 months, how many times did you drive when you perhaps had too much to drink?**

DUIA_3

I_I_I Times (MIN: 0) (MAX: 99; warning after 20)
R (Go to DU_END)

DU_Q4 **Do you ever go out with friends or family to a place where you will be**
DUIA_4 **consuming alcohol?**

1 Yes
2 No (Go to DU_END)
DK, R (Go to DU_END)

DU_Q5 **When people go out, one person can agree ahead of time to be the**
DUIA_5 **designated driver and not to drink any alcohol in order to drive the group home safely. When you go out with your friends, do you arrange to have a designated driver?**

1 Yes
2 No (Go to DU_END)
DK, R (Go to DU_END)

DU_Q6 **How often do you make this arrangement?**
DUIA_6 INTERVIEWER: Read categories to respondent.

1 **Always**
2 **Most of the time**
3 **Sometimes**
4 **Rarely or never**

DU_END Go to next module

ALCOHOL DEPENDENCE / ABUSE

AD_BEG

AD_C1 If proxy interview, go to AD_END.

AD_C1A If AL_Q3 > 2 (has at least 5 drinks at least once a month), go to AD_QINT. Otherwise, go to AD_END.

AD_QINT **The next questions are about how drinking affects people in their activities. We will be referring to the past 12 months, that is, from %date one year ago% to yesterday.**
INTERVIEWER: Press <Enter> to continue.

AD_Q1 **In the past 12 months, have you ever been drunk or hung-over while at work or school or while taking care of children?**
ALDA_1

1 Yes
2 No (Go to AD_Q3)
DK, R (Go to AD_END)

AD_Q2 **How many times? Was it:**
ALDA_2 INTERVIEWER: Read categories to respondent.

1 **... Once or twice?**
2 **... 3 to 5 times?**
3 **... 6 to 10 times?**
4 **... 11 to 20 times?**
5 **... More than 20 times?**

AD_Q3 **In the past 12 months, were you ever in a situation while drunk or hung-over which increased your chances of getting hurt? (For example, driving a boat, using guns, crossing against traffic, or during sports)**
ALDA_3

1 Yes
2 No

AD_Q4 **In the past 12 months, have you had any emotional or psychological problems because of alcohol use, such as feeling uninterested in things, depressed or suspicious of people?**
ALDA_4

1 Yes
2 No

AD_Q5 **In the past 12 months, have you had such a strong desire or urge to drink alcohol that you could not resist it or could not think of anything else?**

ALDA_5

1 Yes
2 No

AD_Q6 **In the past 12 months, have you had a period of a month or more when you spent a great deal of time getting drunk or being hung-over?**

ALDA_6

1 Yes
2 No

AD_Q7 **In the past 12 months, did you ever drink much more or for a longer period of time than you intended?**

ALDA_7

1 Yes
2 No (Go to AD_Q9)
DK, R (Go to AD_Q9)

AD_Q8 **How many times? Was it:**
ALDA_8 INTERVIEWER: Read categories to respondent.

1 **... Once or twice?**
2 **... 3 to 5 times?**
3 **... 6 to 10 times?**
4 **... 11 to 20 times?**
5 **... More than 20 times?**

AD_Q9 **In the past 12 months, did you ever find that you had to drink more alcohol than usual to get the same effect or that the same amount of alcohol had less effect on you than usual?**

ALDA_9

1 Yes
2 No

AD_END Go to next module

SEXUAL BEHAVIOURS

SB_BEG — Selection of the module is indicated using a Health Region number or province code.

SB_CINT — If proxy interview or age < 15 or age > 59, go to SB_END.

SB_QINT — **I would like to ask you a few personal questions about sexual behavior because of its importance to personal health. You can be assured that anything you tell me will remain confidential.**

SB_Q1
SXBA_1 — **Have you ever had sexual intercourse?**

1 Yes
2 No (Go to SB_END)
DK, R (Go to SB_END)

SB_Q2
SXBA_2 — **How old were you when you first had sexual intercourse?**
INTERVIEWER: Maximum is %current age%.

I_I_I Age in years
(MIN: 10; warning before 12) (MAX: current age)

SB_Q3
SXBA_3 — **In the past 12 months, have you had sexual intercourse?**

1 Yes
2 No (Go to SB_END)
DK, R (Go to SB_END)

SB_Q7 — **For %that/those% %relationship/relationships% that lasted less than a year, how often did you use a condom in the past 12 months?**

SXBA_7

INTERVIEWER: Read categories to respondent.

1 **Always** (Go to SB_END)
2 **Usually**
3 **Occasionally**
4 **Never** (Go to SB_END)
DK, R (Go to SB_END)

SB_Q7A
SXBA_7A — **Did you use a condom the last time?**

1 Yes
2 No

SB_END — Go to next module

DEPRESSION

DP_BEG — Selection of the module is indicated using a Health Region number or province code.

DP_C01 — If proxy interview, go to DP_END.

DP_Q02 — **During the past 12 months, was there ever a time when you felt sad, blue, or depressed for 2 weeks or more in a row?**

DPSA_02

1 Yes
2 No (Go to DP_Q16)
DK, R (Go to DP_END)

DP_Q15 — **Think about the last time you felt this way for 2 weeks or more in a row. In what month was that?**

DPSA_15

1 January 7 July
2 February 8 August
3 March 9 September
4 April 10 October
5 May 11 November
6 June 12 December

Go to DP_END

DP_Q16 — **During the past 12 months, was there ever a time lasting 2 weeks or more when you lost interest in most things like hobbies, work or activities that usually give you pleasure?**

DPSA_16

1 Yes
2 No (Go to DP_END)
DK, R (Go to DP_END)

DP_Q28 — **Think about the last time you had 2 weeks in a row when you felt this way. In what month was that?**

DPSA_28

1 January 7 July
2 February 8 August
3 March 9 September
4 April 10 October
5 May 11 November
6 June 12 December

DP_END — Go to next module

SUICIDAL THOUGHTS AND ATTEMPTS

SU_BEG Selection of the module is indicated using a Health Region number or province code.

SU_C1 If proxy interview or if age < 15, go to SU_END.

SU_QINT **The following questions relate to the sensitive issue of suicide.**
INTERVIEWER: Press <Enter> to continue.

SU_Q1 **Have you ever seriously considered committing suicide or taking your own life?**
SUIA_1

1 Yes
2 No (Go to SU_END)
DK, R (Go to SU_END)

SU_Q2 **Has this happened in the past 12 months?**
SUIA_2

1 Yes
2 No (Go to SU_END)
DK, R (Go to SU_END)

SU_Q3 **Have you ever attempted to commit suicide or tried taking your own life?**
SUIA_3

1 Yes
2 No (Go to SU_END)
DK, R (Go to SU_END)

SU_Q4 **Did this happen in the past 12 months?**
SUIA_4

1 Yes
2 No (Go to SU_END)
DK, R (Go to SU_END)

SU_END Go to next module